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DEPARTMENT OF THE AIR FORCE
75TH CIVIL ENGINEER GROUP (AFMC)
HILL AIR FORCE BASE UTAH

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Public Comment
R307-350 Miscellaneous Metal Parts and Products Coatings
Utah Division of Air Quality
P.O. Box 144820
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Mr. Karmazyn

Hill Air Force Base appreciates the opportunity to comment on the proposed repeal of R307-340 Surface Coating Processes and proposed new rule R307-350 Miscellaneous Metal Parts and Products Coatings (MMPP). It is the commitment of the U.S. Air Force Air Quality Program to protect public health, our workforce, and the environment from harmful pollutants while sustaining the war fighter mission. This commitment involves implementing innovative technologies to prevent and reduce emissions, which is vital to protecting the environment and our community.

**1. Prevent Overlap with Other Surface Coating Rules**

**Comment**
The proposed new rule only exempts the exterior of airplanes resulting in overlap with another proposed rule which is applicable to coatings applied to both interior and exterior surfaces of aircraft and aerospace vehicles such as helicopters, missiles, rockets, and space vehicles.

**Discussion**
It became evident when comparing the proposed R307-350 MMPP rule to other proposed rules that there is the potential for overlap. For example, R307-350 only exempts coating of the exterior of surface of aircraft, whereas R307-355 covers surface coating of both the interior and exterior of the aircraft. Therefore coating of the interior surfaces of aircraft would be subject to both the requirements of R307-355 and R307-350. This duplication is not necessary and can be corrected by extending the exemption in R307-350-3(c) to both the exterior and interior of the aircraft.

Better defining the aerospace vehicle and component exemption will minimize regulatory overlap and prevent the creation of conflicting requirements for coating operations at aerospace

manufacturing or rework facilities which also have non-aerospace processes subject to the proposed new MMPP rule.

**Recommended Change**
R307-350-3. Exemptions.
(c) ~~The exterior of airplanes;~~ **Surface coating of aerospace vehicles and components;**

**2. Add Definition of Aerospace Vehicles and Components**

**Comment**
EPA's Guideline for Control of Volatile Organic Compound Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations defines aerospace vehicle or component as, but not limited to, any fabricated part, processed part, assembly of parts, or completed unit of any aircraft including, but not limited to, airplanes, helicopters, missiles, rockets, and space vehicles.

**Discussion**
The MMPP rule has the potential for overlaps between other source categories therefore R307-350 should include a definition of aerospace vehicle or component.

**Recommended Change**
R307-350-4. Definitions.
**"Aerospace vehicle or component" means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.**

**3. VOC Content Should Be Less Water and Less Exempt Solvent**

**Comment**
Surface coating rules such as the Aerospace CTG exclude water and exempt solvents from the VOC limitations. R307-350 should also exclude water and exempt solvents from the VOC emission limitations.

**Discussion**
The standard method to calculate coating VOC content excludes water and any exempt solvents. The draft of R307-355 only excludes water and should also exclude exempt solvents in the calculation of VOC for compliance demonstration.

**Recommended Change**
R307-350-5. Emission Standards.

TABLE 1
METAL PARTS AND PRODUCTS VOC CONTENT LIMITS
(Values in pounds of VOC per gallon of coating, minus water **and exempt solvents**, as applied)

**4. Work Practices Duplication**

**Comment**
R307-350-7 Work Practices and Recordkeeping (2)(a) through (d) is nearly identical to (1)(a) through (d).

**Discussion**
Work practices are duplicated in R307-350-7.

**Recommended Change**
R307-350-7. Work Practices and Recordkeeping
~~**(2) The work practices for cleaning materials shall be implemented at all times to reduce VOC emissions from fugitive type sources. The work practices shall include, but are not limited to:**~~
~~**(a) Storing all VOC-containing cleaning materials and used shop towels in closed containers;**~~
~~**(b) Ensuring that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;**~~
~~**(c) Minimizing spills of VOC-containing cleaning materials;**~~
~~**(d) Conveying VOC-containing cleaning materials from one location to another in closed container or pipes;**~~

**5. Add Electrodeposition Application Method**

**Comment**
The Control Techniques Guidelines for MMPP specifies use of several coating application methods in conjunction with the use of low-VOC content coatings, including dip coat (electrodeposition).

**Discussion**
Electrodeposition is a specialized form of dip coating where opposite electric charges are applied to the waterborne coating and the part. The coating is deposited on the part by means of electrical attraction, which produces a more uniform coating on the part than traditional dip application.

**Recommended Change**
R307-350-6 Application Methods.
(3) Dip/**electrodeposition** coat;

**6. Remove Solvent Washing**

**Comment**
Surface cleaning is covered by R307-350-7 control techniques and work practices.

**Discussion**
VOC emissions control techniques and work practices are defined whereas solvent washing is not defined in the Control Techniques Guidelines for MMPP.

**Recommended Change**
R307-350-5. Emission Standards.
(2) If more than one emission limitation indicated in this section applies to a specific coating, then the most stringent emission limitation shall apply. ~~All VOC emissions from solvent washing involved in a coating process shall be considered in the emission limitations set forth in R307-350-5(1) unless the solvent is directed into containers that prevent evaporation into the atmosphere.~~

**7. Coating limitations and application methods**

**Comment**
The Control Techniques Guidelines for MMPP states that VOC limits and application methods need not apply to categories listed in R307-350-3(2):
Stencil coatings;
Safety-indicating coatings;
Solid-film lubricants;
Electric-insulating and thermal-conducting coatings;
Magnetic data storage disk coatings; or
Plastic extruded onto metal parts to form a coating.

**Discussion**
R307-350 should be consistent with Control Techniques Guidelines for MMPP as they apply to VOC limits and application methods.

**Recommended Change**
~~(2) The requirements of R307-350-5 do not apply to the following:~~
(~~a~~ g) Stencil coatings;
(~~b~~ h) Safety-indicating coatings;
(~~c~~ i) Solid-film lubricants;
(~~d~~ j) Electric-insulating and thermal-conducting coatings;
(~~e~~ k) Magnetic data storage disk coatings; or
(~~f~~ l) Plastic extruded onto metal parts to form a coating.

**8. Implementation Schedule**

**Comment**
The compliance schedule is unrealistic and needs to be adjusted to allow time to switch to low-VOC coatings or install add-on controls without work stoppage.

**Discussion**
Department of Defense Technical Order change orders require a regulatory driver to begin the process of switching to low-VOC alternatives. Hill AFB has military combat, tactical, and munitions coatings that, singularly or in combination, provide military-unique performance and/or battlefield survival capabilities.

**Recommended Change**
R307-350-9. Compliance Schedule.
(1) All sources **defined in R307-350-2 are subject to this rule 3 years after the effective date of this rule.** ~~within Davis and Salt Lake counties shall be in compliance by September 1, 2013~~.
~~(2) All sources in Box Elder, Cache, Tooele, Utah and Weber counties shall be in compliance with this rule by January 1, 2014.~~

**9. Change Applicability to those Areas Defined as Nonattainment and Maintenance Areas**

**Comment**
Only portions of counties in nonattainment and maintenance areas need to be subject to this rule.

**Discussion**
Hill Air Force Base has locations in the unclassified/attainment portions of the proposed applicable counties.

Recommended Change
R307-350-2. Applicability.
(1) R307-350 applies to each source that applies miscellaneous metal parts and products coating operations, including related cleaning activities, that have the potential to emit 2.7 tons per year of VOCs and that are located ~~within Box Elder, Cache, Davis, Salt Lake, Tooele, Utah and Weber counties.~~**in PM10 and PM2.5 nonattainment and maintenance plan areas.**

**10. Definitions**

**Comment**
The Control Techniques Guidelines for MMPP definitions differ from those listed in the proposed rule.

**Discussion**
Definition corrections are verbatim from the Control Techniques Guidelines for MMPP and primer is not defined in the CTG and not used in the rule text.

**Recommended Change**
R307-350-4. Definitions.
"Etching filler" mean a coating that contains less than **23**% solids by weight.
"Extreme high-gloss coating" means a coating which, when tested by the American Society for Testing Material (ASTM) Test Method D-523 adopted in 1980, shows a reflectance of ~~95~~ **75** or more on a 60 degree meter.
"Military specification coating" means a coating applied to metal parts and products and which has a ~~paint~~ formulation approved by a United States military agency for use on military equipment.
~~"Primer" means a coating applied to a surface to provide a firm bond between the substrate and subsequent coats.~~

If you have any questions or would like to discuss this issue further, my point of contact is Mr. Glenn Palmer 75 CEG/CEVC, at (801) 775-6918 or glenn.palmer@hill.af.mil.

Sincerely

JOSEPH A. MARTONE, Ph.D., CIH, QEP, GS-13, DAF
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Attachment
R307-350 Track Change Comments

R307-350 Track Change Comments

**R307-350-1. Purpose.**

The purpose of R307-350 is to limit volatile organic compound (VOC) emissions from miscellaneous metal parts and products coating operations.

**R307-350-2. Applicability.**

(1) R307-350 applies to each source that applies miscellaneous metal parts and products coating operations, including related cleaning activities, that have the potential to emit 2.7 tons per year of VOCs and that are located in the PM10 and PM2.5 nonattainment and maintenance areas. ~~within Box Elder, Cache, Davis, Salt Lake, Tooele, Utah and Weber counties.~~

(2) Applicable industries include:

(a) Large farm machinery (harvesting, fertilizing, planting, tractors, combines, etc.);

(b) Small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.)

(c) Small appliance (fans, mixers, blenders, crock pots, vacuum cleaners, etc.);

(d) Commercial machinery (computers, typewriters, calculators, vending machines, etc.);

(e) Industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

(f) Fabricated metal products (metal covered doors, frames, trailer frames, etc.); and

(g) Any other industrial category that coats metal parts or products under the standard Industrial Classification Code of major group 33 (primary metal industries), major group 34 (fabricated metal products), major group 35 (nonelectric machinery), major group 36 (electrical machinery), major group 37 (transportation equipment) major group 38 (miscellaneous instruments), and major group 39 (miscellaneous manufacturing industries).

**R307-350-3. Exemptions.**

(1) The requirements of R307-350 do not apply to the following:

(a) The surface coating of automobiles and light-duty trucks;

(b) Flat metal sheets and strips in the form of rolls or coils;

(c) ~~The exterior of airplanes~~ Surface coating of aerospace vehicles and components;

(d) Automobile refinishing;

(e) The exterior of marine vessels; or

(f) Customized top coating of automobiles and trucks if production is less than 35 vehicles per day.

~~(2) The requirements of R307-350-5 do not apply to the following:~~

(~~a~~ g) Stencil coatings;
(~~b~~ h) Safety-indicating coatings;
(~~c~~ i) Solid-film lubricants;
(~~d~~ j) Electric-insulating and thermal-conducting coatings;
(~~e~~ k) Magnetic data storage disk coatings; or
(~~f~~ l) Plastic extruded onto metal parts to form a coating.

(3) The requirements of R307-350-6 do not apply to the following:
(a) Touch-up coatings;
(b) Repair coatings; or
(c) Textured finishes.

**R307-350-4. Definitions.**

The following additional definitions apply to R307-350:

"Aerospace vehicle or component" means any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

"Air dried coating" means coatings that are dried by the use of air or a forced warm air at temperatures up to 194 degrees Fahrenheit.

"Baked coating" means coatings that are cured at a temperature at or above 194 degrees Fahrenheit.

"Camouflage coating" means coatings that are used, principally by the military, to conceal equipment from detection.

"Coating" means a protective, functional, or decorative film applied in a thin layer to a surface. This term often applies to paints such as lacquers or enamels. It is also used to refer to films applied to paper, plastics, or foil.

"Coating application System" means all operations and equipment that applies, conveys, and dries a surface coating, including, but not limited to, spray booths, flow coaters, flash off areas, air dryers and ovens.

"Dip coating" means a method of applying coatings to a substrate by submersion into and removal from a coating bath.

"Electric-insulating varnish" means a non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

"Electric-insulating and thermal-conducting" means a coating that displays an electrical insulation of at least 1000 volts DC per mil on a flat test plate and an average thermal conductivity of at least 0.27 BTU per hour-foot-degree-Fahrenheit.

"Electrostatic application" means a method of applying coating particles or coating droplets to a grounded substrate by electrically charging them.

"Etching filler" mean a coating that contains less than

23%
solids by weight and at least 0.5% acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

"Extreme high-gloss coating" means a coating which, when tested by the American Society for Testing Material (ASTM) Test Method D-523 adopted in 1980, shows a reflectance of 75~~95~~ or more on a 60 degree meter.

"Extreme performance coatings" means coatings designed for harsh exposure or extreme environmental conditions.

"Flow coat" means a non-atomized technique of applying coatings to a substrate with a fluid nozzle in a fan pattern with no air supplied to the nozzle.

"Heat-resistant coating" means a coating that must withstand a temperature of at least 400 degrees Fahrenheit during normal use.

"High-performance architectural coating" means a coating used to protect architectural subsections and which meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 605.2-1980.

"High-temperature coating" means a coating that is certified to with-stand a temperature of 1,000 degrees Fahrenheit for 24 hours.

"High-volume, low-pressure (HVLP) spray" means a coating application system which is designed to be operated and which is operated between 0.1 and 10 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and the air horns.

"Magnetic data storage disk coating" means a coating used on a metal disk which stores data magnetically.

"Metallic coating" means a coating which contains more than 5 grams of metal particles per liter of coating, applied.

"Military specification coating" means a coating applied to metal parts and products and which has a ~~paint~~ formulation approved by a United States military agency for use on military equipment.

"Mold-seal coating" means the initial coating applied to a new mold or repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.

"Multi-component coating" means a coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film.

"One-component coating" means a coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.

"Pan backing coating" means a coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

"Prefabricated architectural component coatings" means coatings applied to metal parts and products that are to be used as an architectural structure or their appurtenances including, but not limited to, hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, and large fixed stationary tools.

"Pretreatment coating" means a coating which contains no more than 12% solids by weight, and at least 0.5% acid, by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

~~"Primer" means a coating applied to a surface to provide a firm bond between the substrate and subsequent coats.~~

"Repair coating" means a coating used to recoat portions of a part or product which has sustained mechanical damage to the coating.

"Safety-indicating coating" means a coating which changes physical characteristics, such as color, to indicate unsafe condition.

"Silicone release coating" means any coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces such baking pans.

"Solar-absorbent coating" means a coating which has as its prime purpose the absorption of solar radiation.

"Solid-film lubricant" means a very thin coating consisting of a binder system containing as its chief pigment material one or more of molybdenum disulfide, graphite, polytetrafluoroethylene (PTEF) or other solids that act as a dry lubricant between faying surfaces.

"Stencil coating" means an ink or a coating which is rolled or brushed onto a template or stamp in order to add identifying letters or numbers to metal parts and products.

"Textured finish" means a rough surface produced by spraying and splattering large drops of coating onto a previously applied coating. The coatings used to form the appearance of the textured finish are referred to as textured coatings.

"Touch-up coating" means a coating used to cover minor coating imperfections appearing after the main coating operation.

"Vacuum-metalizing coating" means the undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film.

**R307-350-5. Emission Standards.**

(1) Each owner or operator shall not apply coatings with a VOC content in excess of the amounts specified in Table 1 or shall use an add-on control device as specified in R307-350-8.

TABLE 1

METAL PARTS AND PRODUCTS VOC CONTENT LIMITS
(values in pounds of VOC per gallon of coating, minus water and exempt solvents, as applied)

| COATING CATEGORY | VOC EMISSION RATES | |
|---|---|---|
| | Air Dried | Baked |
| General One Component | 2.8 | 2.3 |
| General Multi Component | 2.8 | 2.3 |
| Camouflage | 3.5 | 3.5 |
| Electric-Insulating varnish | 3.5 | 3.5 |
| Etching Filler | 3.5 | 3.5 |
| Extreme High-Gloss | 3.5 | 3.0 |
| Extreme Performance | 3.5 | 3.0 |
| Heat-Resistant | 3.5 | 3.0 |
| High Performance architectural | 6.2 | 6.2 |
| High Temperature | 3.5 | 3.5 |
| Metallic | 3.5 | 3.5 |
| Military Specification | 2.8 | 2.3 |
| Mold-Seal | 3.5 | 3.5 |
| Pan Backing | 3.5 | 3.5 |
| Prefabricated Architectural Multi-Component | 3.5 | 2.3 |
| Prefabricated Architectural One-Component | 3.5 | 2.3 |

| | | |
|---|---|---|
| Pretreatment Coatings | 3.5 | 3.5 |
| Repair and Touch Up | 3.5 | 3.0 |
| Silicone Release | 3.5 | 3.5 |
| Solar-Absorbent | 3.5 | 3.0 |
| Vacuum-Metalizing | 3.5 | 3.5 |
| Drum Coating, New, Exterior | 2.8 | 2.8 |
| Drum Coating, New, Interior | 3.5 | 3.5 |
| Drum Coating, Reconditioned, Exterior | 3.5 | 3.5 |
| Drum Coating, Reconditioned, Interior | 4.2 | 4.2 |

(2) If more than one emission limitation indicated in this section applies to a specific coating, then the most stringent emission limitation shall apply. ~~All VOC emissions from solvent washing involved in a coating process shall be considered in the emission limitations set forth in R307-350-5(1) unless the solvent is directed into containers that prevent evaporation into the atmosphere.~~

**R307-350-6. Application Methods.**

No owner or operator of a facility shall apply VOC containing coatings to metal parts and products unless the coating is applied with equipment operated according to the equipment manufacturer specifications, and by the use of one of the following methods:

(1) Electrostatic application;

(2) Flow coat;

(3) Dip/electrodeposition coat;

(4) Roll coat;

(5) High-Volume, Low-Pressure (HVLP) Spray;

(6) Hand Application Methods;

(7) Airless or air-assisted airless spray may also be used for metal coatings with a viscosity of 15,000 centipoise or greater, as supplied; or

(8) Such other coating application methods as are demonstrated to the director to be capable of achieving a transfer efficiency equivalent or better to HVLP spray and for which written approval of the director has been obtained.

**R307-350-7. Work Practices and Recordkeeping.**

(1) Control techniques and work practices shall be implemented at all times to reduce VOC emissions from fugitive type sources. Control techniques and work practices shall include, but are not limited to:

(a) Storing all VOC-containing coatings, thinners, used shop towels, and coating-related waste materials in closed containers;

(b) Ensuring that mixing and storage containers used for VOC-containing coatings, thinners, and coating-related waste material are kept closed at all times except when depositing or removing these materials;

(c) Minimizing spills of VOC-containing coatings, thinners, and coating-related waste materials; and

(d) Conveying VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed container or pipes.

~~(2) The work practices for cleaning materials shall be implemented at all times to reduce VOC emissions from fugitive type sources. The work practices shall include, but are not limited to:~~

~~(a) Storing all VOC containing cleaning materials and used shop towels in closed containers;~~

~~(b) Ensuring that storage containers used for VOC containing cleaning materials are kept closed at all times except when depositing or removing these materials;~~

~~(c) Minimizing spills of VOC containing cleaning materials;~~

~~(d) Conveying VOC containing cleaning materials from one location to another in closed container or pipes; and~~

(e) Minimizing VOC emission from cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(3) The owner or operator shall maintain records from the manufacturer that demonstrate compliance with the emission standards of R307-350-5(1).

**R307-350-8. Optional Add-On Controls.**

(1) The owner or operator may install and maintain an incinerator, carbon adsorption, or any other add-on emission control device, provided that the emission control device will attain at least 90% efficiency performance.

(2) The owner or operator of a control device shall provide certification from the manufacturer that the emission control system will attain required efficiency performance.

(3) Emission control systems shall be operated and maintained in accordance with the manufacturer recommendations. The owner or operator shall maintain for a minimum of two years records of

operating and maintenance sufficient to demonstrate that the equipment is being operated and maintained in accordance with the manufacturer recommendations.

**R307-350-9. Compliance Schedule.**

(1) All sources defined in R307-350-2 are subject to this rule 3 years after the effective date of this rule.~~within Davis and Salt Lake counties shall be in compliance by September 1, 2013.~~

~~(2) All sources in Box Elder, Cache, Tooele, Utah and Weber counties shall be in compliance with this rule by January 1, 2014.~~

**KEY: air pollution, emission controls, coatings, miscellaneous metal parts**

**Date of Enactment or Last Substantive Amendment: 2012**